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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/769,974

02/02/2004

Dag Willen

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EXAMINER

CAZAN, LIVIUS RADU

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

11/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/769,974	Applicant(s) WILLEN, DAG	
	Examiner LIVIOUS R. CAZAN	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8-11 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,10,11 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on 7/30/2009 has been fully considered and made of record.

Specification

2. The disclosure is objected to because of the following informalities: the specification should not contain any references to specific claim numbers. See for example "claim 2" in line 9 on page 4. All such instances should be corrected. Also, on page 2, line 34, "How ver" should read --However--.

3. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 1, 2, 5, 6, 8, 10, 11, and 13-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuki (JP01231217; please refer to the translation) in view of Long (US3562401).

6. **Regarding claims 1, 2, 5, 6, 8, 11, 14, and 16**, Matsuki discloses (see Figs. 1 and 2) a method for constructing a superconducting cable comprising N phases (u, v, w), the method comprising:

providing each phase in the cable in the form of a number (twelve) of superconducting phase conductors (4 with 10 and 8 with the outer insulator; see last three lines on page 5 and first line on page 6 in the translation), each only containing superconducting cable wire (4/8) and an insulation system (10/outer insulator),

classifying the phase-conductors in N-phase groups (see page 5, Ins. 20-22), each N-phase group comprising a phase conductor from each of the N different phases, where N is greater than one (three, in this case), and where the number of N-phase groups is larger than or equal to two (twelve, in this case),

arranging insulation means in the cable around each phase conductor or between assemblies of phase conductors, and providing that said N-phase groups are electrically insulated from each other (see ln. 24 on page 5 to ln. 1 on page 6), and

wherein the N-phase groups are arranged in a number of coaxial/concentric groups comprising at least two coaxial layers (two; see Fig. 1; see inner ring having six elements 16 and outer ring having twelve) and having a common axis, either with different phase conductors corresponding to different phases in each coaxial/concentric layer or with each individual phase conductor of a particular phase in a separate coaxial layer,

wherein the superconducting cable has fewer cooling channels for refrigerant than phase conductors,

and wherein the common axis of the coaxial layers is oriented along the length of the superconducting cable.

7. Matsuki discloses substantially the claimed invention, except for the N-phase groups being surrounded by a common electrically conductive screen which is kept at 0 potential and comprises a superconducting, metallic, or semiconducting materials. Matsuki shows layers 12 and 14, which may already provide the claimed function, but Matsuki does not explicitly discuss this.

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8. Long teaches a three-phase superconducting cable wherein a metallic grounded screen (42, Fig. 3) serves as a neutral conductor. See col. 3, lns. 60-72.

9. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to provide the cable of Matsuki with such a screen, for the same advantages as in Long.

10. **Regarding claims 10 and 15**, Matsuki in view of Long discloses substantially the claimed invention, except for the number of N-phase groups being greater than 10 or greater than 100.

11. At the time the invention was made, it would have been an obvious matter of engineering design choice to a person of ordinary skill in the art to apply this invention to cables having more than 10 or more than 100 phase groups, because Applicant has not disclosed that these particular values provide an advantage, are used for a particular purpose, or solve a stated problem, and the invention of Matsuki is clearly not limited to a particular number of N-phase groups.

12. Therefore it would have been prima facie obvious to modify the invention of Matsuki and Long to obtain the invention as specified in claims 10 and 15, because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Matsuki and Long.

13. **Regarding claim 13**, as claimed, there is no structural difference between a phase conductor intended to carry a phase current and a phase conductor intended to be a neutral conductor. Choosing which particular conductor to be utilized as a neutral conductor would be part of a method of using the cable, rather than of manufacturing it.

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As such, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to pick one or more of the conductors 4/8 as a neutral conductor, as needed for the particular power transmission line design.

Response to Arguments

14. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIVIUS R. CAZAN whose telephone number is (571) 272-8032. The examiner can normally be reached on M-F 8:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DERRIS H. BANKS can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729

/L. R. C./ 11/20/2009
Examiner, Art Unit 3729